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Contents

Page

A new species of the genus *Buthus* Leach, 1815 (Scorpiones: Buthidae) from dry forest formations in Central African Republic
Wilson R. Lourenço 71

A further study on *Textrix denticulata* (Olivier, 1789) from Turkey (Araneae: Agelenidae)
Osman Seyyar, İhsan Harmanşah, Tuncay Türkeş & Hakan Demir 80

First records for spider fauna of the European part of Turkey (Araneae)
Nurcan Demircan & Aydın Topçu 85

First record of genus *Hypsosinga* Ausserer, 1871 from India with description of *Hypsosinga satpuraensis* sp. n. (Araneae: Araneidae)
Atul Keshaorao Bodkhe, Virendra Prasad Uniyal & Subhash Suresh Kamble 92

New spider species of genus *Cambalida* (Araneae: Corinnidae) from Satpura Landscape (MP), India
Atul Keshaorao Bodkhe, Virendra Prasad Uniyal & Subhash Suresh Kamble 97

A new crab spider record from Turkey (Araneae: Thomisidae)
İlhan Coşar, Tarık Danışman & Rıza Tarlabölen 104

A note on *Eresus albopictus* Simon, 1873 (Araneae: Eresidae)
Hisham K. El-Hennawy 107

Volume 15 (2016-2017)

Back issues: Vol. 1 (1987-1990), Vol. 2 (1990-1992), Vol. 3 (1992-1993), Vol. 4 (1994-1996), Vol. 5 (1996-1997), Vol. 6 (1998-2000), Vol. 7 (2000-2001), Vol. 8 (2002-2003), Vol. 9 (2004-2005), Vol. 10 (2006-2007), Vol. 11 (2008-2009), Vol. 12 (2010-2011), Vol. 13 (2012-2013), Vol. 14 (2014-2015).

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A new species of the genus *Buthus* Leach, 1815 (Scorpiones: Buthidae) from dry forest formations in Central African Republic

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Abstract

A new species belonging to the genus *Buthus* Leach (Scorpiones, Buthidae) is described from Woodland Savannah formations in Central African Republic. The new species can be included in the '*Buthus occitanus* complex' of species, and probably can be associated with the '*Buthus occitanus*' from French occidental Africa (AOF) previously reported by Vachon from this large region located southern of the Sahel. This is the first record of a *Buthus* species from Central African Republic, and the most southern one within the known distribution of the genus. With the description of *Buthus centroafricanus* sp. n., the status of one more population of *Buthus* spp. from the sub-saharan region of Africa is clarified.

Keywords: Scorpion, *Buthus*, new species, sub-saharan Africa, Central African Republic.

Introduction

As already outlined in several previous publications (Lourenço, 2002, 2003, 2015; Lourenço & Leguin, 2012) the taxonomy of the genus *Buthus* Leach, 1815 is particularly complex. Only a complete and precise study of several species led to a clear definition of their status (Lourenço, 2003; Lourenço & Vachon, 2004; Lourenço & Leguin, 2012). In despite of the efforts attempted by Vachon (1952) in his monograph about the North African scorpions, the composition of the genus *Buthus* remained confused for several decades. Vachon (1952) tried to establish a better definition of the genus and proposed a classification for the species of *Buthus*, in particular for those belonging to the '*Buthus occitanus*' complex of species, but this classification remained unsatisfactory (Lourenço, 2003).

Figs. 1-2. *Buthus centroafricanus* sp. n., male holotype. Habitus, dorsal and ventral aspects.

Only recently, a more precise definition of the *Buthus* species belonging to the '*Buthus occitanus*' complex, was again attempted (Lourenço 2002, 2003, 2015; Lourenço & Leguin, 2012), followed by the promotion of some subspecies to species rank and description of several new species (Lourenço, 2002, 2003, 2005a, 2008, 2015; Lourenço & Slimani, 2004; Lourenço & Qi, 2006; Kovařik, 2006; Lourenço *et al*., 2009; Lourenço & Cloudsley-Thompson, 2012; Lourenço & Simon, 2012; Lourenço & Leguin, 2012). Other contributions by Lourenço (2005b, c) and Lourenço & Geniez (2005) have also attempted to clarify the taxonomic status of species of *Buthus* associated with *Buthus atlantis* Pocock, 1889 or belonging to the '*Buthus occitanus*' complex, but distributed in the more southern region of the Sahara (Lourenço & Leguin, 2012; Lourenço, 2015). These contributions, however, are far from being complete, and further studies on several species of these regions are yet necessary.

This is the case with certain *Buthus* populations from Western and sub-Saharan Africa which are mainly distributed over the area between Senegal, Niger, Chad, Cameroon, Sudan, and now Central African Republic. Vachon (1949, 1952) referred to these populations as '*Buthus occitanus*' without any reference to subspecies. The material which was studied by Vachon is still in part available in the Muséum national d'Histoire

naturelle, Paris, but it is limited and poorly preserved. For this reason, no conclusion was reached concerning these populations in preliminary publications (Lourenço, 2002, 2003). More recently, however (Lourenço, 2005b, c), the study of some well preserved specimens of *Buthus* from Guinea, Senegal, and Niger have justified the description of two new species, *Buthus elizabethae* Lourenço, 2005 and *Buthus elhennawyi* Lourenço, 2005. The first of these new species was not, however, associated with *Buthus occitanus* as it was suggested by Vachon (1949, 1952), but rather with *Buthus atlantis* Pocock, a species known only from the south of Morocco. The description of *Buthus bonito* (Lourenço & Geniez, 2005) from the extreme south of Morocco, a species possibly also present in Mauritania brought further evidence for the pattern of distribution of these species. With the description of *Buthus elizabethae* which is distributed in the savannas of Guinea and Senegal, the status of this population from Western Africa was in part clarified. However, as stated by Lourenço (2005b, c), the taxonomic position of other *Buthus* populations distributed further to the East, mainly in Niger, Cameroon, Côte d'Ivoire, Chad, and now Central African Republic required yet clarification. The study of two specimens of *Buthus* from Senegal and Niger have led to the description of a new species, *Buthus elhennawyi*. This species was, however, associated with the '*Buthus occitanus* complex' of species, and certainly corresponds with one of the forms previously defined by Vachon (1949, 1952) from French Occidental Africa. Subsequently to the description of *B. elhennawyi* we received a large series of *Buthus* sp. from the region of Sanguéré in Cameroon what leads to the description of *Buthus prudenti* Lourenço & Leguin, 2012. A detailed study of this new species allowed us to confirm that this population as yet another new species belonging to the '*Buthus occitanus*' complex. This new species was the first record of a *Buthus* species from Cameroon. More recently, one more new species *Buthus labuschagnei* Lourenço, 2015 was described from the south of Chad. With the descriptions of these several new species the status of more and more populations of *Buthus* from the sub-Saharan region of Africa can be clarified. At present the study of a single male specimen of *Buthus* collected by my late friend P.M. Brignoli from Woodland Savannah formations of Central African Republic lead to the description of one more new species which also belongs to the '*Buthus occitanus* complex' of species. This new species represents the first record of genus *Buthus* for Central African Republic and brings the number of known scorpion species in the country to five (Prendini, 2004; Rossi, 2015).

Methods

Illustrations and measurements were produced using a Wild M5 stereo-microscope with a drawing tube and an ocular micrometer. Measurements follow Stahnke (1970) and are given in mm. Trichobothrial notations follow Vachon (1974) while morphological terminology mostly follows Vachon (1952) and Hjelle (1990).

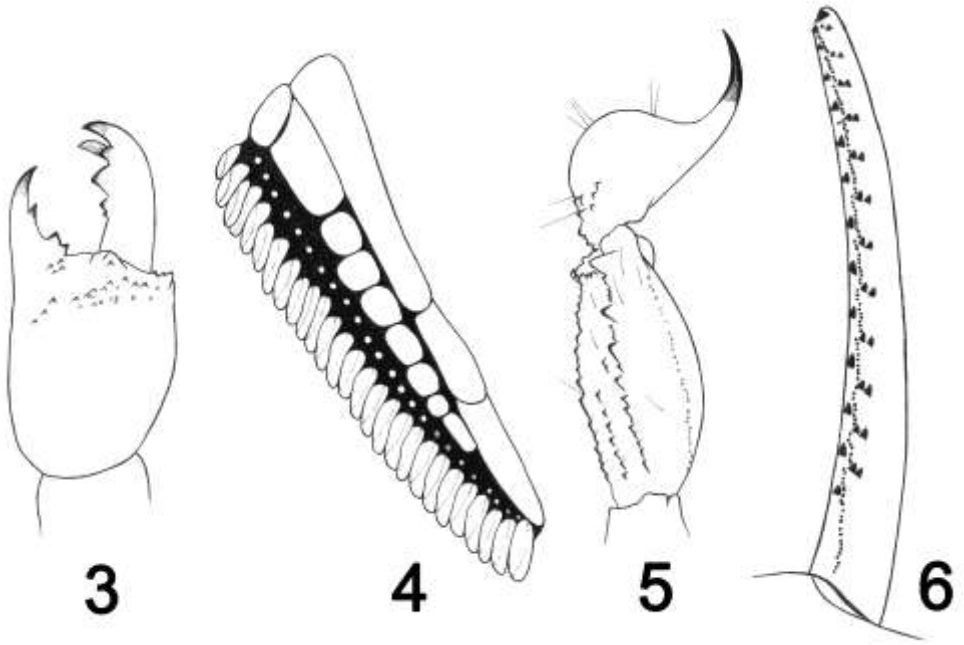
***Buthus centroafricanus* sp. n.** (Figs. 1-11)

Type material: Central African Republic, Province Haute-Kotto, between Bria and Jalinga, 1 male holotype (P.M. Brignoli leg.), 25/II/1973. In dry forest – woodland savannah formation. Holotype deposited in the Muséum national d'Histoire naturelle, Paris, France.

Etymology: Specific name refers to the country where the new species was collected.

Diagnosis

Scorpion of medium size, in relation to the species of the genus, reaching a total length of 52.9 mm for male. General colouration yellow to reddish-yellow; carinae on carapace and pedipalps slightly darker, more to brownish. Pedipalps yellow; legs pale yellow. Chelicerae pale yellow with variegated spots on the anterior edge (diagnostic); fingers' teeth almost blackish. Carinae and granulations strongly marked on carapace and tergites; moderately marked on metasomal segments. Furrows on carapace moderately marked. Fixed and movable fingers with 11-12 rows of granules in male. Pectines with 27-27 teeth in male; male pectines touching and overlapping in their proximal region (diagnostic).



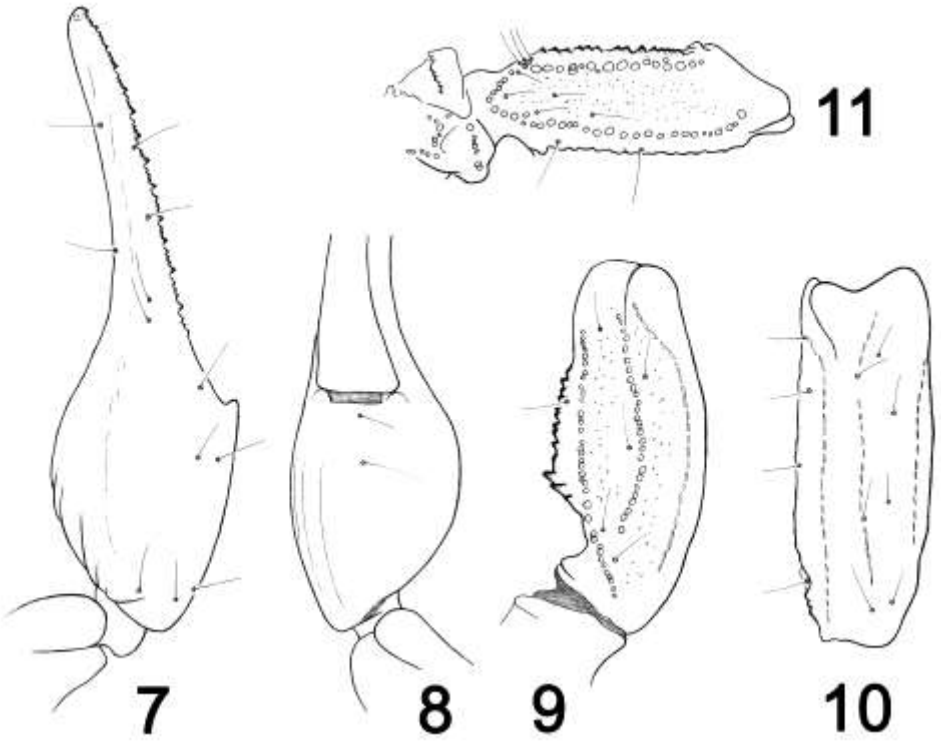
Figs. 3-6. *Buthus centroafricanus* sp. n., male holotype. 3. Chelicera, dorsal aspect. 4. Pecten, external aspect. 5. Metasomal segment V and telson, lateral aspect. 6. Cutting edge of movable finger of pedipalp chela with rows of granules.

Description based on male holotype. Measurements in Table (I).

Colouration. Basically yellow to reddish-yellow; carinae on carapace and pedipalps slightly darker, more to brownish. Prosoma: carapace reddish-yellow; eyes surrounded by black pigment. Mesosoma: tergites reddish-yellow with the carinae and granulations slightly darker. Metasomal segments and vesicle yellow; aculeus yellow at its base and dark reddish at its extremity. Venter reddish-yellow. Chelicerae pale yellow with variegated spots on the anterior edge (diagnostic); fingers yellowish with almost blackish teeth. Pedipalps yellow with some carinae brownish; chela fingers with the oblique rows of granules almost blackish. Legs pale yellow with some brownish spots over carinae.

Morphology. Carapace strongly granular; anterior margin with a weak emargination on male (diagnostic). Carinae strongly marked; anterior median, central median and posterior median carinae strongly granular; 'lyre' configuration moderately marked. All furrows moderate to strong. Median ocular tubercle almost in the centre of carapace. Eyes separated by almost 2.5 ocular diameters. Three pairs of lateral eyes of moderate size. Sternum triangular, slightly wider than long. Mesosoma: tergites with strong and intense granulation. Three longitudinal carinae strongly crenulate in all tergites; lateral carinae reduced in tergites I and II. Tergite VII pentacarinate. Venter: genital operculum divided longitudinally and formed by two semi triangular plates. Pectines: pectinal tooth count

27-27 in male holotype; middle basal lamella of the pectines not dilated; male pectines overlapping in their proximal region (diagnostic). Sternites with minute lateral granulations and elongated spiracles; four carinae on sternite VII; sternite VI with two weak carinae next to the spiracles; other sternites without carinae and with two moderately marked furrows. Metasomal segments I to III with 10 moderate to weak carinae; segment IV with 8 moderate carinae; intermediate carinae incomplete on segment II and vestigial on III; ventral carinae more strongly marked on segments II and III; segment V with five carinae; the ventrolateral carinae crenulate with 2-3 lobate denticles posteriorly but moderately marked; ventral median carina only slightly divided posteriorly; anal arc composed of 7-8 ventral teeth, and two lateral lobes. All segments with a smooth dorsal depression; intercarinal spaces very weakly granular to smooth, except for the ventral aspect of segment V which presents a thin intense granulation and some larger granules. Telson with some granulations; aculeus strongly curved, slightly shorter than the vesicle; subaculear tooth absent. Cheliceral dentition as defined by Vachon (1963) for the family Buthidae; external distal and internal distal denticles of approximately the same length; basal denticles of movable finger small but well distinct; ventral aspect of both fingers and manus covered with long dense setae. Pedipalps: femur pentacarinate; patella with eight carinae; chela smooth with only vestigial carinae; all faces weakly granular to smooth. Fixed and movable fingers with 11-12 oblique rows of granules. Internal and external accessory granules present and moderate; three accessory granules on the distal end of movable finger next to the terminal denticle. Legs: tarsus with two longitudinal rows of 6-8 setae ventrally; tibial spur strong on legs III and IV; prolateral spurs moderate to strong on legs I to IV. Trichobothriotaxy: trichobothrial pattern of Type A, orthobothriotaxic as defined by Vachon (1974). Dorsal trichobothria of femur arranged in β-configuration (Vachon, 1975).



Figs. 7-11. *Buthus centroafricanus* sp. n., male holotype. Trichobothrial pattern. 7-8. Chela, dorso-external and ventral aspects. 9-10. Patella, dorsal and external aspects. 11. Femur, dorsal aspect.

Relationships

Buthus centroafricanus sp. n. can be placed within the '*Buthus occitanus* complex' of species. It can be associated with other *Buthus* species and in particular with *Buthus prudenti* Lourenço & Leguin, 2012, and *Buthus labuschagnei* Lourenço, 2015 both geographically related species. Since the male of *Buthus labuschagnei* remains unknown, the new species can be better compared with *B. prudenti*. The new species can be diagnostic by a number of characters:

(i) Smaller size overall and different morphometric values; see Table (I), (ii) paler colouration and presence of variegated spots on the anterior edge of chelicerae, (iii) male pectines in *B. prudenti*, do not overlap in their proximal region, whereas they overlap strongly in male of *B. centroafricanus* sp. n., (iv) the new species has stronger granulations on carapace, tergites and telson, (v) anterior edge of carapace is emarginated in the new species whereas it is convex in *B. prudenti*. Moreover, all three species inhabit different types of habitat (see next section).

Table I. Morphometric values (in mm) of the male holotype of *Buthus prudenti* and male holotype of *Buthus centroafricanus* sp. n.

	♂ *Buthus prudenti*	♂ *Buthus centroafricanus* sp. n.
Total length *	69.8	52.9
Carapace:		
- length	7.3	6.2
- anterior width	4.8	4.2
- posterior width	8.0	6.9
Mesosoma length	20.0	13.6
Metasomal segment I:		
- length	5.5	4.3
- width	5.3	4.3
Metasomal segment V:		
- length	8.6	6.9
- width	4.3	3.6
- depth	3.5	2.9
Telson length	7.2	5.7
Vesicle:		
- width	3.2	2.6
- depth	2.8	2.4
Pedipalp:		
- Femur length	5.9	4.8
- Femur width	2.0	1.6
- Patella length	7.0	5.5
- Patella width	2.8	2.3
- Chela length	11.5	9.4
- Chela width	3.0	2.4
- Chela depth	3.2	2.6
Movable finger: length	7.4	6.2

* including telson

Habitat of the new species

The area in which *Buthus centroafricanus* sp. n. was collected is mostly covered by Savannah and Woodland Savannah formations which represent a transitional zone between the Sahel and more humid forests in Central African Republic (Fig. 12-Map). However, important amounts of these natural formations are gradually replaced since some years by agriculture activities (Mayaux *et al.*, 1999).

It is quite possible, however, that with increasing anthropic action on the environment, most scorpion species will know an important regression of their populations. Only a few more opportunistic species will see their populations expand and colonize most of the area (Lourenço, 1991). Our knowledge about the ecology of *Buthus centroafricanus* sp. n. is yet too limited to allow any suggestion about its possible evolution in these modified environments.

Fig. 12. Map of Central African Republic, showing the type locality of the new species (white circle).

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A further study on *Textrix denticulata* (Olivier, 1789) from Turkey (Araneae: Agelenidae)

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Abstract

Both male and female specimens of *Textrix denticulata* (Olivier, 1789) were collected from different localities of Turkey. The male of this species is the first record for the Turkish araneofauna. The characteristic features, drawings and photography of genitalia and general habitus of both sexes are presented. Data on the collecting and distribution of the species all over the world are also given.

Keywords: Spiders, Agelenidae, *Textrix denticulata*, Turkey.

Introduction

The agelenid spiders are generally hairy, medium to large-sized and characterized often by very long, two-segmented posterior spinnerets. The long spinnerets are visible when the spiders are viewed from above. Among the agelenid genera, *Textrix* Sundevall, 1833 has the longest spinnerets. The members of this genus have the posterior row of eyes strongly recurved with the medians larger than the laterals. The narrow cephalic region is conspicuously elevated (Figs. 2A, C).

Seven species of this genus are known all over the world. Six of them (*Textrix caudata* L. Koch, 1872, *T. chyzeri* de Blauwe, 1980, *T. denticulata* (Olivier, 1789), *T. intermedia* Wunderlich, 2008, *T. pinicola* Simon, 1875 and *T. rubrofoliata* Pesarini, 1990) were described from Europe, and the other species *T. nigromarginata* Strand, 1906 was recorded from Ethiopia (World Spider Catalog, 2016). Until now, only two females of *Textrix denticulata* (Olivier, 1789) has been recorded from Turkey (Amasya and Kastamonu provinces), but no record of the male (Brignoli, 1978). In this study, the description of the male and female of *T. denticulata* are given in detail. The work also includes data on the collecting localities and its distribution all over the world.

Material and Methods

The specimens were collected from different regions of Turkey and preserved in 70% ethanol. In the identification, the keys of Heimer & Nentwig (1991) and Roberts (1995) were consulted. The identification was made by means of a SZX61 Olympus stereomicroscope. Examined specimens were deposited in the ÖHUAM.

The distribution of this species is given according to the World Spider Catalog (2016). The abbreviations used in this paper are as follow: AME = anterior median eyes; PME = posterior median eyes; LE = lateral eyes; AGE = Agelenidae; ÖHUAM = Arachnology Museum of Ömer Halisdemir University.

Results

Textrix denticulata (Olivier, 1789)

Material examined. 2♀♀, Kayı village, Ilgaz district, Çankırı province, 03.VIII.2007, leg. Gökhan Hınıslı (Depository: ÖHUAM AGE 18/0001–2), collected from among stones; 3♂♂ 4♀♀ Yahyalı district, Kayseri province, 27.VII.2007, leg. Osman Seyyar (Depository: ÖHUAM AGE 38/0001-7), collected on ground and among stones; 2♂♂ 2♀♀, Dumlupınar martyrdom surrounding (38°50'43"N, 29°57'35"E), Kütahya province, 1251m, 25.VII.2015, leg. İhsan Harmanşah and Osman Seyyar (Depository: ÖHUAM AGE 43/0001–4); 1♀, Tavşanlı district in Kütahya Province (39°34'57"N, 29°27'52"E), 841m, 02.VII.2015, leg. Hakan Demir.

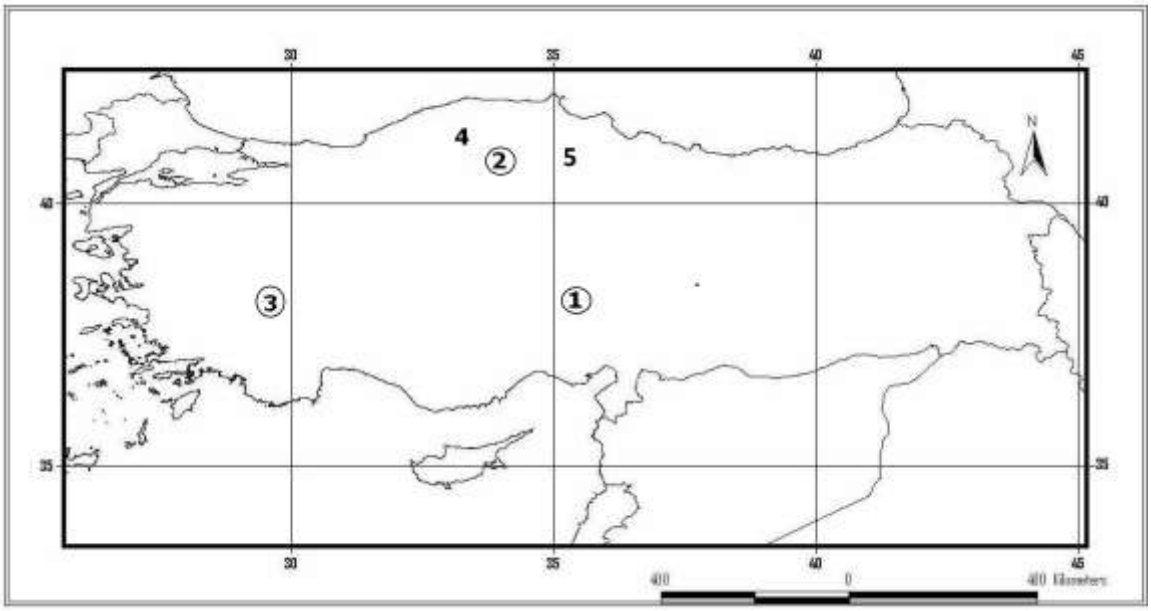

Fig. 1. The collecting localities of *Textrix denticulata* (Olivier, 1789) in Turkey. 1–3. New localities: Kayseri, Çankırı and Kütahya respectively. 4–5. Old localities: Kastamonu and Amasya respectively.

Description. Measurements, total length of the body: 9.2–10.6 mm in females, 8.2–8.6 mm in males. In both sexes, carapace dark brown-black with light median band, narrowed in front and head faintly elevated. Thorax elevated in the middle and fovea distinctive. Ocular area darker than carapace. From the front, eyes are arranged in two short rows, both of eye rows recurved (posterior rows more strongly recurved). All eyes circular, PME largest, AME smallest. LE nearly same size. Cheliceral fangs small, two

retromarginal and three promarginal teeth (middle tooth of promarginal teeth are bigger than others). Labium and endites rectangular, the length of endites nearly two times long from labium. Sternum light brown-brown, nearly oval, sharply attenuated at base. Legs hairy, yellow-brown with dark marks and rings. Opisthosoma dark brown-black with light horse-shoe shaped marking anteriorly, reddish in the middle with mixed patterns. Further back on the opisthosoma this marking is broken into a series of paired light spots. Posterior spinnerets largest and nearly more two times longer than the rest. Epigyne and male palp (Figs. 3-4) resemble the descriptions of Heimer & Nentwig (1991) and Roberts (1995).

Fig. 2. General habitus of *Textrix denticulata* (Olivier, 1789). A-B. Female. A. dorsal view. B. ventral view. C. Male, dorsal view.

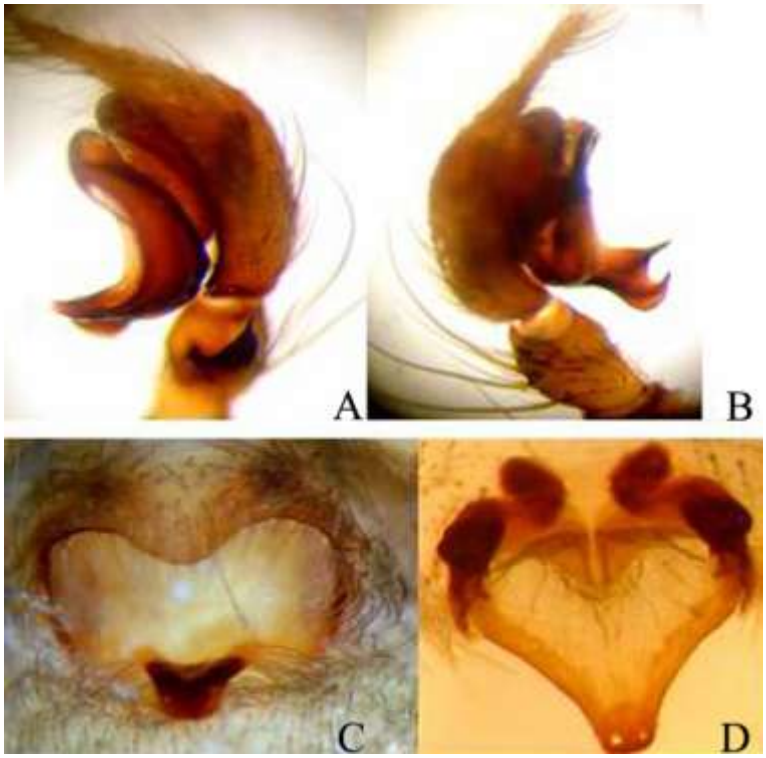

Fig. 3. The genitalia photographs of *Textrix denticulata* (Olivier, 1789). A-B. Male palp. A. retrolateral view. B. prolateral view. Female epigyne. C. dorsal view. D. ventral view (vulvae).

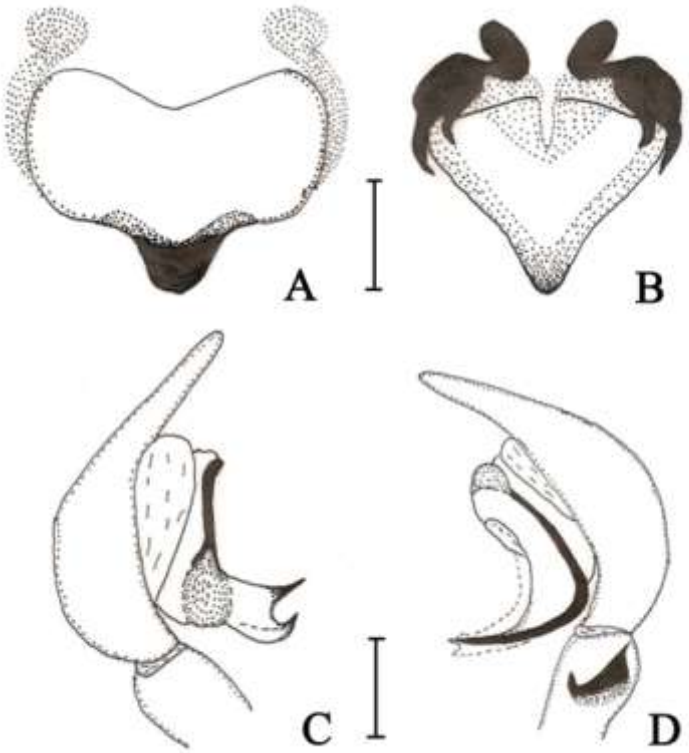

Fig. 4. The genitalia drawings of *Textrix denticulata* (Olivier, 1789). A-B. Female epigyne. A. dorsal view. B. ventral view (vulvae). C-D. Male palp. C. prolateral view. D. retrolateral view. Scale bar: 0.5 mm.

World distribution. Europe (World Spider Catalog, 2016).

Discussion

T. denticulata is widely distributed in Europe but poorly known in Anatolia peninsula, Amasya and Kastamonu Province. In this study, we add new localities, Çankırı, Kayseri and Kütahya Provinces for the distribution of this species in Anatolia (Fig. 1). Although Brignoli (1978) recorded *T. denticulata* from Turkey, Amasya and Kastamonu Province, it was overlooked in the old Turkish Spider Checklists (Bayram, 2002; Topçu *et al.*, 2005; Bayram *et al.*, 2016). This species may be uncommon in Turkey because we have found it from a few localities during our trips in different regions of Turkey. This species was found among stones on the ground. We observed it while moving very fast among stones. They look like a wolf spider but can be recognized by the large posterior spinnerets. Adult specimens were found in July and August. The characteristic features of the Anatolian samples are not different from the European specimens.

Three species of *Textrix*, i.e. *T. coarctata* (Dufour, 1831), *T. flavomaculata* (Lucas, 1846) and *T. vestita* C.L. Koch, 1841, were reported in the Turkish spider checklists (Karol, 1967; Bayram, 2002). Later, *T. coarctata* and *T. flavomaculata* were transferred to *Lycosoides* while *T. vestita* was transfered to *Maimuna* (see Topçu *et al.*, 2005; Bayram *et al.*, 2016; World Spider Catalog, 2016).

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First records for spider fauna of the European part of Turkey (Araneae)

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Abstract

Spider specimens collected from different parts of European Turkey were studied. Ninety-two species are recorded for the first time from European part of Turkey. *Porrhomma convexum* (Westring, 1851) is a new record for Turkey. The list of localities, coordinates and collection dates of first records were given and first records were summarized as a list.

Keywords: Araneae, fauna, first record, spider, Turkey.

Introduction

Our knowledge of the spider fauna of European Turkey is relatively poor. Until now, 197 species have been recorded to spider fauna of the European part of Turkey. The present study has made substantial contributions to the araneofauna of the European part of Turkey. It is expected that further studies will reveal more spider species new to the fauna of Turkey.

Ninety-two species are recorded for the first time from the European part of Turkey. *Porrhomma convexum* (Westring, 1851) is a new record to the Turkish araneo-fauna (Demircan, 2015). First records are compared with checklists of Turkey (Bayram *et al.* 2016; Topçu *et al*., 2005; Topçu *et al*., 2006) and a related paper (Helsdingen, 2013).

Material and Methods

This study is based on material collected between 2013 and 2015 from the European part of Turkey. Totally, 178 species were identified; 92 of them are recorded for the first time from the European part of Turkey. They were preserved in 70% ethanol

and deposited in ÖHUAM (Arachnology Museum of Ömer Halisdemir University). The list of localities, coordinates and collection dates of first records were given in Table (1) and first the records were summarized in Table (2). All measurements are in millimetres. World distribution of *P. convexum* follows the World Spider Catalog (2016).

Table 1. The list of localities, coordinates and collection dates of first records.

No.	Localities / Coordinates / Collecting Dates
1	İstanbul: Beşiktaş, Yıldız Park, (41°04'900"N, 29°01'548"E), 13.10.2013
2	İstanbul: Fatih, Yedikule Dungeons, (40°99'512"N, 28°92'135"E), 21.10.2013
3	İstanbul: Zeytinburnu, Kazlıçeşme square (40°99'329"N, 28°91'358"E), 30.10.2013
4	İstanbul: Fatih, Yedikule Dungeons, (40°99'512"N, 28°92'135"E), 02.04.2014
5	İstanbul: Beşiktaş, Yıldız Park, (41°04'900"N, 29°01'548"E), 05.05.2014
6	Edirne: Karaağaç road, Tuna river urban forest, (41°66'355"N, 26°55'206"E), 18.05.2014
7	Edirne: Merkez, Sarayiçi road, (41°69'227"N, 26°55'650"E), 18.05.2014
8	Edirne: Enez, Taşaltı road, (40°43'465"N, 26°05'281"E), 19.05.2014
9	Edirne: Keşan, Kocadere pond vicinity, (40°86'627"N, 26°64'380"E), 19.05.2014
10	İstanbul: Fatih, Yedikule Dungeon, (40°99'512"N, 28°92'135"E), 21.05.2014
11	İstanbul: Beşiktaş, Yıldız Park, (41°04'900"N, 29°01'548"E), 24.05.2014
12	Tekirdağ: Saray, Laladere promenade area (41°32'220"N, 28°00'482"E), 25.05.2014
13	Tekirdağ: Saray, Bahçeköy road (41°54'957"N, 28°04'824"E), 25.05.2014
14	Tekirdağ: Merkez, Barış & Özgürlük Park vicinity (40°98'035"N, 27°52'804"E), 25.05.2014
15	İstanbul: Fatih, Yedikule Dungeons, (40°99'512"N, 28°92'135"E), 01.06.2014
16	İstanbul: Sarıyer, Belgrad Forest, (41°18'834"N, 28°98'268"E), 15.06.2014
17	İstanbul: Fatih, Yedikule Dungeons, (40°99'512"N, 28°92'135"E), 29.07.2014
18	İstanbul: Fatih, Yedikule Dungeons, (40°99'512"N, 28°92'135"E), 17.08.2014
19	Tekirdağ: Şarköy, Gaziköy vicinity (40°74'644"N, 27°33'084"E), 03.09.2014
20	Tekirdağ: Şarköy, İğdebağları village (40°65'007"N, 27°14'540"E), 04.09.2014
21	Kırklareli: Demirköy, İğneada, Longoz National Park, (41°87'703"N, 27°98'148"E), 13.09.2014
22	Kırklareli: Vize, Kıyıköy vicinity (41°63'667"N, 28°09'623"E), 14.09.2014
23	Tekirdağ: Saray, Kavacık village, Koca (Ambar) cave, (41°02'873"N, 28°58'520"E), 22.09.2014
24	Tekirdağ: Saray, Ayvacık village, Küçük Kalaslı cave, (41°29'835"N, 27°55'101"E), 22.09.2014
25	Tekirdağ: Saray, Bahçeköy, Ceneviz cave, (41°29'845"N, 27°55'062"E), 23.09.2014
26	Tekirdağ: Saray, Bahçeköy, Saklısu cave, (41°35'092"N, 28°01'563"E), 23.09.2014
27	Kırklareli: Vize, Kıyıköy, Kıyıköy cave, (41°35'179"N, 28°01'341"E), 24.09.2014
28	Kırklareli: Vize, Kıyıköy, Yelkenkaya cave, (41°37'197"N, 28°05'849"E), 24.09.2014
29	Kırklareli: Vize, Balkaya village, Uzuntarla cave, (41°34'828"N, 27°57'281"E), 24.09.2014
30	Kırklareli: Vize, Hamidiye village, Kurudere cave (41°38'948"N, 27°58'463"E), 25.09.2014

31	Kırklareli: Vize, Kışlacık village, Kovantaşı cave, (41°42'349"N, 27°54'683"E), 25.09.2014
32	Kırklareli: Vize, Soğucak village, Soğucak cave, (41°38'504"N, 27°39'425"E), 26.09.2014
33	Kırklareli: Vize, Sergen village, Bağlar cave, (41°43'770"N, 27°40'900"E), 26.09.2014
34	Çanakkale: Eceabat, Kabatepe Harbour vicinity, (40°12'032"N, 26°16'248"E), 18.04.2015
35	Çanakkale: Gökçeada, Kaleköy, (40°13'059"N, 25°53'039"E), 18.04.2015
36	Çanakkale: Gökçeada, Yeni Bademli road, (40°13'037"N, 25°54'050"E), 18.04.2015
37	Çanakkale: Gökçeada, Kuzu Harbour vicinity, (40°13'723"N, 25°56'860"E), 19.04.2015
38	Çanakkale: Gökçeada, Merkez, (40°11'498"N, 25°54'390"E), 19.04.2015
39	Çanakkale: Gökçeada, Çınarlı road, (40°11'556"N, 25°54'532"E), 20.04.2015
40	Tekirdağ: Saray, Bozoba Promenade area, (41°37'816"N, 27°89'190"E), 27.04.2015
41	Tekirdağ: Merkez, Barış & Özgürlük Park vicinity (40°98'035"N, 27°52'804"E), 27.04.2015
42	İstanbul: Beşiktaş, Yıldız Park, (41°04'900"N, 29°01'548"E), 04.05.2015
43	İstanbul: Fatih, Yedikule Dungeon, (40°99'512"N, 28°92'135"E), 17.05.2015
44	Kırklareli: Vize, Kışlacık village, Kovantaşı cave, (41°42'349"N, 27°54'683"E), 26.05.2015
45	Kırklareli: Vize, Hamidiye village, Kurudere cave, (41°38'946"N, 27°58'458"E), 26.05.2015
46	Kırklareli: Vize, Hamidiye village, Kurudere vicinity, (41°38'948"N, 27°58'463"E), 26.05.2015
47	Kırklareli: Demirköy, İğneada Longoz National Park, (41°53'448"N, 28°00'050"E), 27.05.2015
48	Kırklareli: Demirköy, Sarpdere village, Dupnisa cave, (41°50'676"N, 27°33'682"E), 27.05.2015
49	Kırklareli: Merkez, Kırklareli Dam vicinity, (41°53'487"N, 27°29'180"E), 28.05.2015
50	Kırklareli: Pınarhisar road (41°44'904"N, 27°40'236"E), 28.05.2015
51	Edirne: Süloğlu, Süloğlu Dam vicinity, (41°47'572"N, 27°16'632"E), 29.05.2015
52	Edirne: Süloğlu, Taşlısekban village, (41°48'615"N, 26°51'420"E), 29.05.2015
53	Edirne: Uzunköprü, Alıç village, (41°03'739"N, 26°38'413"E), 29.05.2015
54	Edirne: Uzunköprü, Yeniköy, (41°20'809"N, 26°45'753"E), 29.05.2015
55	Edirne: Enez, Taşaltı road, (40°43'465"N, 26°05'281"E), 30.05.2015
56	Çanakkale: Gökçeada, Yenimahalle, (40°12'409"N, 25°55'389"E), 30.05.2015
57	Çanakkale: Gelibolu, Kocaçeşme village, (40°39'945"N, 26°48'253"E), 30.05.2015
58	Edirne: Keşan, Çelebi village, (40°40'496"N, 26°20'434"E), 30.05.2015
59	Çanakkale: Gökçeada, Eşelek road, (40°08'176"N, 25°56'724"E), 31.05.2015
60	Çanakkale: Gökçeada, Tepeköy road, (40°10'262"N, 25°45'642"E), 31.05.2015
61	Çanakkale: Gökçeada, Aydıncık road, (40°11'241"N, 25°52'815"E), 31.05.2015
62	Çanakkale: Gökçeada, Kokina road, (40°06'556"N, 25°51'048"E), 31.05.2015

Results

Until now, 197 species have been recorded to the spider fauna of the European part of Turkey. In present study, 92 species are reported as new records for the European part of Turkey including *Porrhomma convexum* (Westring, 1851) as a new record for Turkey. Thus, the total number of the spider species in the European part of Turkey reaches to 289. In addition, studies on *Hoplopholcus* sp. are still in progress.

Porrhomma convexum (Westring, 1851)
Material examined: Turkey, Tekirdağ province, Saray district, Ayvacık village, Küçük Kalaslı cave, (41°29'53"N, 27°55'10"E), 183 m., 22.09.2014, 1♀, 1♂; Tekirdağ province, Saray district, Bahçeköy, Saklısu cave, (41°35'09"N, 28°01'56"E), 179 m., 23.09.2014, 1♀; Kırklareli province, Vize district, Sergen village, Bağlar cave, (41°43'57"N, 27°40'50"E), 470 m., 26.09.2014, 1♂; Kırklareli province, Vize district, Kışlacık village, Kovantaşı cave, (41°42'34"N, 27°54'48"E), 224 m., 26.05.2015, 1♀, 1♂.
Descriptive notes (Fig. 1): Female: Body length 2.4 mm. Prosoma yellow. Opisthosoma yellowish-brown. Legs yellow. Epigynal opening narrower anteriorly.
Male: Body length 2.5 mm. The body colouration as in female. Embolus long and curved.
World distribution: Holarctic (World Spider Catalog, 2016).

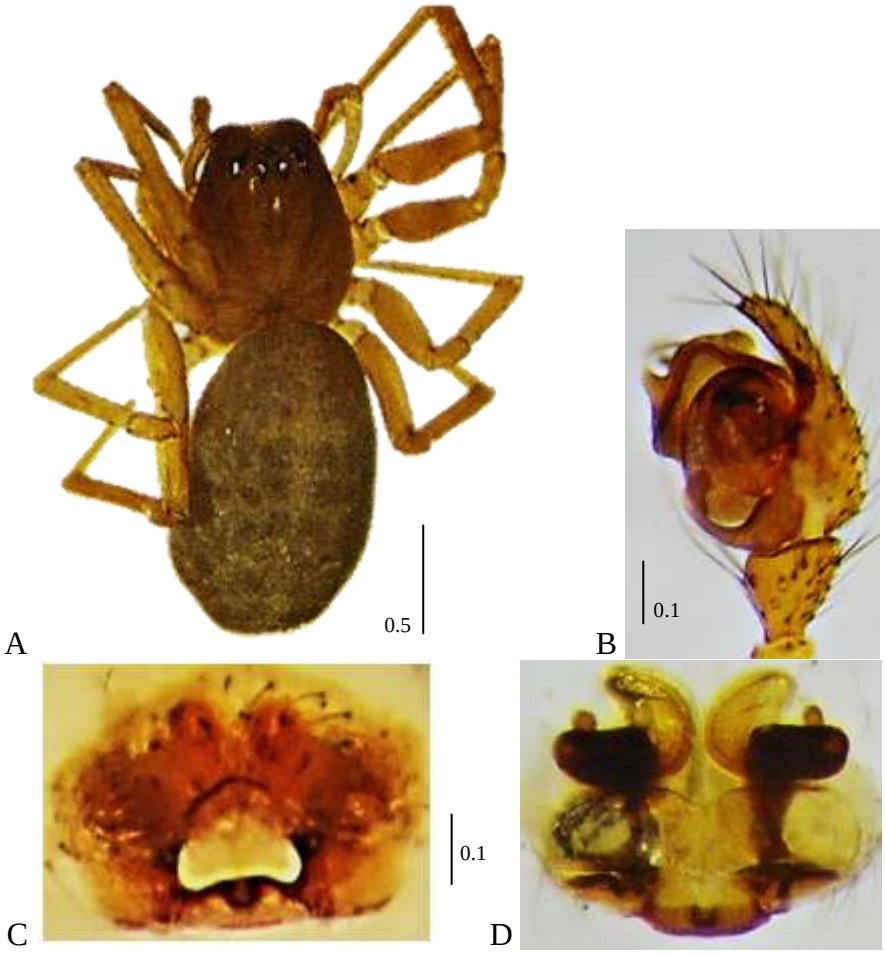

Fig. 1. *Porrhomma convexum* (Westring, 1851) ♀, ♂. A. Female, habitus, dorsal view. B. Male palpal organ, lateral view. C. Female epigyne, ventral view. D. Female vulvae, dorsal view. Scale bars in mm.

Table 2. First records for the European part of Turkey, localities and sexes indicated.

Family / Species	Localities	Male	Female
AGELENIDAE C.L. Koch, 1837			
Inermocoelotes karlinskii (Kulczyński, 1906)	31	1	-
Tegenaria dalmatica Kulczyński, 1906	10, 28, 43	1	10
Tegenaria domestica (Clerck, 1757)	27, 37, 48	1	3
Tegenaria faniapollinis Brignoli, 1978	43	2	1
Tegenaria hasperi Chyzer, 1897	6, 7, 16	4	6
Tegenaria pagana C.L. Koch, 1840	32	-	3
Tegenaria percuriosa Brignoli, 1972	10, 16, 23, 25, 30, 31, 44	1	11
Textrix chyzeri de Blauwe, 1980	29	4	6
ARANEIDAE Clerck, 1757			
Cyclosa sierrae Simon, 1870	11	-	4
Gibbaranea bituberculata (Walckenaer, 1802)	12, 34, 36, 39, 47	3	5
Hypsosinga pygmaea (Sundevall, 1831)	19, 40, 51	-	5
Zilla diodia (Walckenaer, 1802)	16, 47	-	3
CLUBIONIDAE Wagner, 1887			
Clubiona comta C.L. Koch, 1839	16	-	3
Clubiona terrestris Westring, 1851	16	-	1
DICTYNIDAE O. Pickard-Cambridge, 1871			
Brigittea civica (Lucas, 1850)	7, 12	2	-
Cicurina cicur (Fabricius, 1793)	25	-	1
DYSDERIDAE C.L. Koch, 1837			
Harpactea clementi Bosmans, 2009	43	1	-
Harpactea strandjica Dimitrov, 1997	25	-	1
EUTICHURIDAE Lehtinen, 1967			
Cheiracanthium elegans Thorell, 1875	49, 51	2	1
Cheiracanthium mildei L. Koch, 1864	4, 15, 16, 42	2	3
GNAPHOSIDAE Pocock, 1898			
Anagraphis ochracea (L. Koch, 1867)	14	-	1
Aphantaulax trifasciata (O.P.-Cambridge, 1872)	59	-	1
Civizelotes caucasius (L. Koch, 1866)	52, 59	1	1
Drassodes lutescens (C.L. Koch, 1839)	59	-	4
Drassyllus crimeaensis Kovblyuk, 2003	12	-	3
Drassyllus praeficus (L. Koch, 1866)	7, 11, 12, 13, 53, 56	5	8
Micaria pulicaria (Sundevall, 1831)	21	1	-
Nomisia exornata (C.L. Koch, 1839)	2, 10, 52, 56, 57, 59, 60	4	10
Nomisia ripariensis (O.P.-Cambridge, 1872)	56, 59	3	-
Phaeocedus braccatus (L. Koch, 1866)	54	1	-
Scotophaeus blackwalli (Thorell, 1871)	11	-	1
Zelotes tenuis (L. Koch, 1866)	18, 38	-	2
LINYPHIIDAE Blackwall, 1859			
Bathyphantes gracilis (Blackwall, 1841)	8	1	-
Centromerus valkanovi Deltshev, 1983	42	-	1
Diplostyla concolor (Wider, 1834)	7	-	1
Ipa terrenus (L. Koch, 1879)	53	1	-
Lepthyphantes leprosus (Ohlert, 1865)	15, 23, 33	7	3

Microlinyphia pusilla (Sundevall, 1830)	9, 14	-	2
Neriene radiata (Walckenaer, 1841)	16	-	1
Ostearius melanopygius (O.P.-Cambridge, 1879)	10, 17	-	2
Porrhomma convexum (Westring, 1851)	24, 26, 32, 44	3	3
Tenuiphantes flavipes (Blackwall, 1854)	16	1	4
LYCOSIDAE Sundevall, 1833			
Alopecosa taeniopus (Kulczyński, 1895)	2	1	-
Arctosa tbilisiensis Mcheidze, 1946	55	1	-
Aulonia albimana (Walckenaer, 1805)	12, 50	-	2
Pardosa lugubris (Walckenaer, 1802)	12, 13, 46	1	18
Piratula knorri (Scopoli, 1763)	46	-	7
MIMETIDAE Simon, 1881			
Ero aphana (Walckenaer, 1802)	16, 58	1	2
NESTICIDAE Simon, 1894			
Nesticus cellulanus (Clerck, 1757)	24, 26, 30, 31, 33, 44, 45, 48	6	26
OECOBIIDAE Blackwall, 1862			
Oecobius maculatus Simon, 1870	17, 56, 61	1	3
PHILODROMIDAE Thorell, 1870			
Philodromus albidus Kulczyński, 1911	16	-	1
Philodromus poecilus (Thorell, 1872)	40	-	2
Pulchellodromus pulchellus (Lucas, 1846)	8, 10, 14, 54	6	6
Thanatus vulgaris Simon, 1870	59	-	2
PHOLCIDAE C.L. Koch, 1850			
Hoplopholcus sp.	24, 25, 26, 30, 44, 45	31	19
Spermophora senoculata (Dugès, 1836)	6	-	1
PHRUROLITHIDAE Banks, 1892			
Phrurolithus festivus (C.L. Koch, 1835)	8, 16	1	1
SALTICIDAE Blackwall, 1841			
Ballus chalybeius (Walckenaer, 1802)	10, 16, 42	1	2
Chalcoscirtus infimus (Simon, 1868)	57	-	2
Cyrba algerina (Lucas, 1846)	56, 59	1	2
Euophrys frontalis (Walckenaer, 1802)	3, 11, 16	2	3
Habrocestum egaeum Metzner, 1999	10	2	-
Habrocestum papilionaceum (L. Koch, 1867)	8	1	-
Heliophanus edentulus Simon, 1871	7, 10	7	2
Icius hamatus (C.L. Koch, 1846)	11	1	-
Marpissa muscosa (Clerck, 1757)	25	1	-
Plexippus paykulli (Audouin, 1825)	43	1	-
Pseudeuophrys obsoleta (Simon, 1868)	60	-	1
Pseudeuophrys vafra (Blackwall, 1867)	11, 42	9	15
Sitticus distinguendus (Simon, 1868)	7	-	1
SCYTODIDAE Blackwall, 1864			
Scytodes thoracica (Latreille, 1802)	1, 11, 14, 20, 42, 46	2	7
SEGESTRIIDAE Simon, 1893			
Segestria senoculata (Linnaeus, 1758)	11, 42	-	4
SPARASSIDAE Bertkau, 1872			
Eusparassus walckenaeri (Audouin, 1825)	62	-	1
Micrommata ligurina (C.L. Koch, 1845)	9	1	-

TETRAGNATHIDAE Menge, 1866			
Pachygnatha degeeri Sundevall, 1830	21	8	4
THERIDIIDAE Sundevall, 1833			
Asagena phalerata (Panzer, 1801)	5, 9, 11, 35, 40, 41, 42, 52, 60	7	3
Crustulina scabripes Simon, 1881	11, 42	1	3
Enoplognatha thoracica (Hahn, 1833)	12	1	-
Episinus truncatus Latreille, 1809	16	1	2
Neottiura uncinata (Lucas, 1846)	8	-	1
Parasteatoda tepidariorum (C.L. Koch, 1841)	3, 4, 5, 10, 15, 16, 18, 28, 42	10	19
Sardinidion blackwalli (O.P.-Cambridge, 1871)	10, 12	2	1
Theridion melanurum Hahn, 1831	6, 7, 39, 41, 42	2	10
Theridion mystaceum L. Koch, 1870	12, 14, 16, 38	3	6
THOMISIDAE Sundevall, 1833			
Ebrechtella tricuspidata (Fabricius, 1775)	22	1	-
Heriaeus setiger (O.P.-Cambridge, 1872)	12	-	1
Ozyptila confluens (C.L. Koch, 1845)	20, 21, 42	2	1
Tmarus stellio Simon, 1875	46	-	1
Xysticus kempeleni Thorell, 1872	40	1	1
TITANOECIDAE Lehtinen, 1967			
Titanoeca quadriguttata (Hahn, 1833)	6, 9, 60, 61	-	4
Titanoeca schineri L. Koch, 1872	7	-	1
ULOBORIDAE Thorell, 1869			
Hyptiotes paradoxus (C.L. Koch, 1834)	21	1	-
ZODARIIDAE Thorell, 1881			
Zodarion morosum Denis, 1935	7, 12, 52, 53, 54, 56, 57, 59, 60	3	14

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First record of genus *Hypsosinga* Ausserer, 1871 from India with description of *Hypsosinga satpuraensis* sp. n. (Araneae: Araneidae)

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Abstract

The spider genus *Hypsosinga* Ausserer, 1871 of Araneidae is recorded for the first time in India with the description of the new species *Hypsosinga satpuraensis* from Pachmarhi Wildlife Sanctuary, Dist. Hoshangabad (M P), India.

Keywords: Spiders, Araneidae, *Hypsosinga*, new species, Satpura, Central India.

Introduction

The spider genus *Hypsosinga* Ausserer, 1871 of Araneidae is recorded for the first time in India. From this poorly known genus *Hypsosinga*, only 20 species are recorded so far worldwide (World Spider Catalog, 2016); however there is no report of its existence in India. The present paper records this genus in India with the description of *Hypsosinga satpuraensis* sp. n. from Pachmarhi Wildlife Sanctuary, Dist. Hoshangabad (M P), India.

This work is a part of a study attempting to make an inventory of the spider species at different sites of the landscape with respect to altitudinal gradient and vegetation types. It also emphasizes the need for conservation of spider diversity by characterizing species diversity and highlighting rare and endemic species. This systematic approach will help to pave way for better understanding of the Satpura highland spider diversity, leading to ecological monitoring of the environment. The study also highlights the importance of spiders as an indicator species as they are clearly an integral part of global biodiversity, playing many important roles in ecosystem as predators and source of food for other creature. First investigation and survey of spiders were done from Satpura landscape, Pachmarhi (22.47ºN, 78.43ºE). Pachmarhi is blessed with rich floral and faunal diversity. It comes under Satpura National Park of Madhya Pradesh, dry and wet climatic zone of tropical India. The Satpura Conservation Landscape (SCL) lies between 20º11' to 22º56'N and 77º47' to 78º52'E. The total area is

4987.38 sq. km. It covers three wildlife conservation units viz. Bori Wildlife Sanctuary (485.72 sq. km), Satpura national Park (524.37 sq. km), and Panchmarhi wildlife Sanctuary (417.78 sq. km).

Spider family Araneidae comprises 167 genera and 3084 species worldwide (World Spider Catalog, 2016). In India, 28 genera and 163 species of Araneidae are recorded (Keswani *et al.*, 2012). Genus *Hypsosinga* Ausserer, 1871 is represented by 20 valid species in the world (World Spider Catalog, 2016). The orb-weaver spiders of genus *Hypsosinga* has shiny bodies with a resemblance, to some extent, to some theridiid spiders. Hence, Sundevall (1831) identified and described *Hypsosinga pygmaea* as a *Theridion* species.

Ausserer (1871) was the first one who suggested the separation of *Hypsosinga* from *Singa*. His distinctions were based primarily on differences in the clypeus height and the shape of median ocular quadrangle. The two genera however were reinstated and newly defined by Levi (1972) while revising the American araneid fauna. This classification is accepted by Locket *et al.* (1974). Later, more *Hypsosinga* species were described in this genus (World Spider Catalog, 2016).

The smooth carapace, frequently with the black eye region, relatively short legs and the shiny opisthosoma marked by a pattern of distinctive longitudinal bands or light spots are characters by which *Singa* and *Hypsosinga* species are commonly separated from other araneids. It was not recorded from India till date. We report and describe *Hypsosinga* for the first time from India. Also, we describe a new species of it reported from Pachmarhi Wildlife Sanctuary, M P. India.

Material and Methods

The present study is based on a sample collected in May 2014 from Pachmarhi Wild Life sanctuary. The specimen of a *Hypsosinga* sp. n. was found by active search method. The specimen was examined by using Olympus SZ61 stereomicroscope mounted with slides SLI 1500 camera. The spider specimen was preserved in 100% ethanol and is currently deposited in Spider Research Laboratory of J. D. P. S. M, Daryapur. Leg measurements are given in the following sequence: total length (femur, patella, tibia, metatarsus, and tarsus). All measurements are in millimetres and abbreviations and their explanations are as follows: AME = anterior median eyes; ALE = anterior lateral eyes; JDPSMD = J. D. Patil Sangludkar Mahavidyalaya, Daryapur; MOQ = median ocular quadrangle; PLE = posterior lateral eyes; PME = posterior median eyes.

Results

Taxonomy

Genus *Hypsosinga* Ausserer, 1871

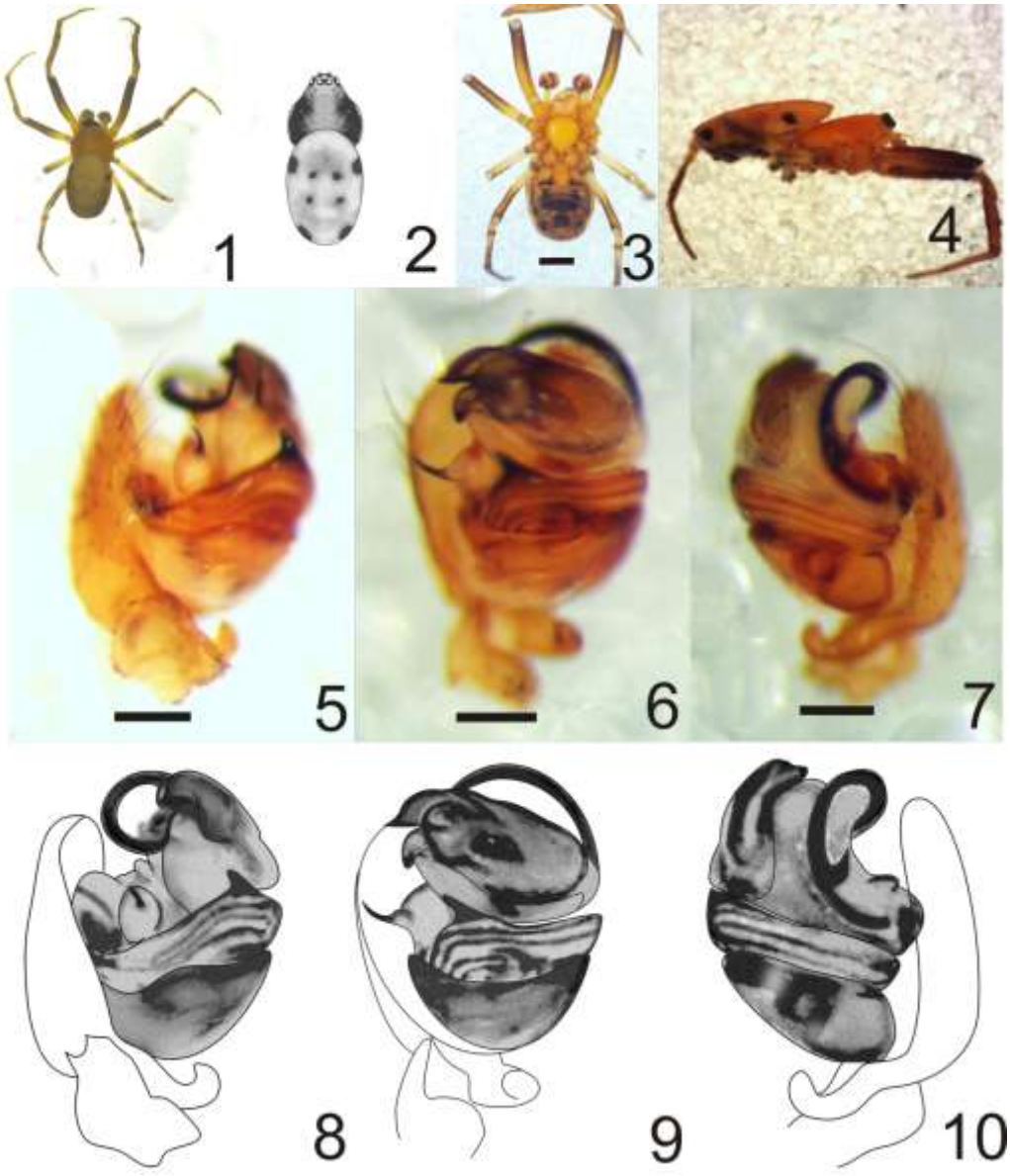
Diagnosis of the genus: High front, spur on tegulum embolus having partly transparent large scale on it, during mating it may be broken off and lodged in the copulatory opening of the female (Levi, 1972).

Hypsosinga satpuraensis **sp. n.** (Figs. 1-10)

Material examined: Male holotype from Panchmarhi Wildlife Sanctuary, Madhya Pradesh, (22º31'30.0"N, 78º25'40.9"E), India; 28th May 2014, collected by A. K. Bodkhe (SRL JDPSM).

Type locality: Pachmarhi wildlife sanctuary, Dist. Hoshangabad, Madhya Pradesh, India.

Etymology: The specific epithet refers to the type locality, Satpura.
Diagnosis of species: The male specimen of *H. satpuraensis* sp. n. is very much close to *H. pygmaea*, but can be distinguished by difference in the thickness and shape of terminal apophysis of the palpal organ, which is much flat and broad; its proximal end is broad and distal end is in the form of two lips or beak-like appearance.
Distribution: Pachmarhi Wildlife Sanctuary, Dist. Hoshangabad, Madhya Pradesh, India.



Figs.1-10. *Hypsosinga satpuraensis* sp. n. 1-4. Habitus. 1-2. dorsal view. 3. ventral view. 4. lateral view. 5-10. Palpal organ. 5, 8. lateral view. 6, 9. ventral view. 7, 10. retro-lateral view. Scale bars: (3) 0.5 mm, (5-7) 0.1 mm.

Description
Measurements: Total length 2.17. Cephalothorax 1.09 long, 0.93 wide. Abdomen 1.53 long, 1.00 wide. Clypeus height 0.12. Eyes diameters: AME 0.06, ALE 0.04, PME 0.06, PLE 0.05; MOQ 0.07 long, 0.06 wide. Measurements of legs: Leg I 3.42(1.10, 0.39, 0.89, 0.63, 0.40), II 3.31 (1.05, 0.29, 0.79, 0.69, 0.49), III 2.25 (0.73, 0.23, 0.45, 0.44, 0.40), IV 2.94 (0.97, 0.24, 0.69, 0.67, 0.37).

Carapace pear shaped, flat, glossy, broader at posterior part and narrower at anterior end that is elevated where ocular area is situated, which is surrounded by white large setae; granular carapace covered by white hairs, broader at middle, cervical grooves present, posterior end covered by over hanging abdomen, longer than broader, posterior end is broad and dorsally flat, clypeus flat, below eyes in position. Eyes surrounded with setae, each eye surrounded with black border, arranged in two rows, anterior one procurved and the posterior is recurved, lateral eyes close together and widely separated from medians, MOQ almost square, blackish coloured, longer than broader, lateral eyes are equal, placed laterally and median eyes are larger than laterals and are sub-equal. Sternum dark orange coloured lacking hairs, roughly triangular/heart-shaped with coxal margins, granular in nature. Chelicerae strong with setae, strongly curved fangs, and with two teeth at its margin. Labium wider than longer, anteriorly thickened; endites slender, triangular in shape, distal end with dense scopulae. Leg formula: 1243, leg with three tarsal claws, I and II femur dark brown distally, III and IV with lateral dark bands, I tibia with many long spines, all leg segments with small numerous setae, trichobothria present on all segments except tarsi, spines are present on all femora, metatarsi, tibiae and patellae, leg I stout and stronger than the rest, leg III small and slender, all segments except coxae and trochanters covered by dense setae. Male palp is complex, femur with basal tubercles, patella with 2 macro setae, a small curved spur forming median apophysis, embolus long in the form of hair lying much of its length within the curved terminal apophysis, terminal apophysis flat, broad, its lower lip curved over upper lip. Abdomen elliptical in outline, oval, dorsum entirely curved with scuta, yellowish orange coloured dorsally with 2 paired black spots at lateral margins, 2 pair of brown sigilla present, scuta covered with minute white hairs, granular in nature, ventrum with epigastric scutum, pair of book lungs, in front of spinnerets constricted black horizontal bands present, clothed with black hairs, yellowish brown in colour. Spinnerets are small brown coloured, segmented, anteriors large, posteriors small, colulus present (Fig. 1).

Discussion

Species of *Hypsosinga* are small orb weavers, found among herbs, low shrubs of midways and roadside; probably mature found in May to August. *H. pygmaea* (Sundevall, 1831) has long threadlike embolus, *H. rubens* (Hentz, 1847) distally with slender embolus. Serrated margins present on tegulum of *H. groenlandica* Simon, 1889; *H. funebris* (Keyserling, 1892) has bent terminal apophysis. These are few species with their diagnostic characters which share some common characters with the new *H. satpuraensis* sp. n. but this species differs in terminal apophysis which is flat and stout. The present study adds a new species to the 20 valid accepted species of genus *Hypsosinga* and the first record of its occurrence in India.

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New spider species of genus *Cambalida* (Araneae: Corinnidae) from Satpura Landscape (MP), India

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Abstract

Genus *Cambalida* Simon, 1909 of family Corinnidae was reported for the first time in Asia by Murthappa *et al.* in 2016. This poorly studied genus was previously known only from Africa by 10 valid species, unknown to the rest of the world. Present paper deals with a new species, *Cambalida dhupgadensis* sp. n., of it from Pachmarhi Wild Life Sanctuary, Dist. Hoshangabad (M P), India.

Keywords: Spiders, Corinnidae, *Cambalida*, new species, Satpura, Central India.

Introduction

Genus *Cambalida* Simon, 1909 was previously placed in Clubionidae, subfamily Micariinae, by Simon (1898). Lehtinen (1967) transferred Micariinae to Gnaphosidae while Reiskind (1969) placed *Castianeira* Keyserling, 1879 and 14 related genera in Corinnidae, but considered *Messapus* and *Cambalida* as *incertae sedis*. Brignoli (1983) described 25 genera including *Cambalida* in Gnaphosidae. Platnick (1989) corrected Lehtinnen's unjustified transfer and placed Micariinae, with the exception of *Micaria* Westring, 1851 (Gnaphosidae) and *Supunna* Simon, 1897 (Corinnidae), in Liocranidae. *Cambalida* is already listed in Corinnidae, Castianeirinae by Dippenaar-Schoeman & Jocqué (1997), but without further justification. Genus *Cambalida* was officially transferred to Corinnidae by Bosselaers & Jocqué (2000).

Family Corinnidae Karsch, 1880 comprises 67 genera with 744 species worldwide (World Spider Catalog, 2016). Corinnids are ground-living spiders or armored spider species living in foliage having ground living relatives (Deeleman-Reinhold, 2001). Castianeirinae is the major sub family of Corinnidae, which are predominating ant-mimicking spiders. Presently, genus *Cambalida* includes 13 species (World Spider Catalog, 2016).

In 2012, Haddad revised genus *Cambalida* in which he transferred three species from *Castianeira* to *Cambalida*, viz, *C. deminuta, C. fulvipes* and *C. loricifera* and one species from *Brachyphaea* Simon, 1895 and re-described males of *C. deminuta* and *C. loricifera* and their unknown females had been described for the first time (Haddad, 2012); he re-described *C. fulvipes* (Simon, 1896) and *C. coriacea* Simon, 1909 and also suggested *nomen dubium* for *C. insulana* Simon, 1909. In that paper, he also described five new species i.e., *C. compressa*, *C. dippenaarae*, *C. griswoldi*, *C. lineata*, and *C. unica* for the first time (Haddad, 2012).

Until 2016, there were no record of genus *Cambalida* throughout Asia, it was recorded only from Africa. Murthappa *et al.* (2016) had found it in India and published the first record in Asia. They described *C. deorsa* and *C. tuma* as new species and transferred *Cambalida flavipes* (Gravely, 1931) from *Castianeira* to *Cambalida*.

The first investigation and survey of spiders was done from Satpura landscape, Pachmarhi (22.47ºN, 78.43ºE). Pachmarhi is blessed with rich floral and faunal diversity. It comes under Satpura National Park of Madhya Pradesh, a dry and wet climatic zone of tropical India. The Satpura Conservation Landscape (SCL) lies between 20º11' to 22º56'N and 77º47' to 78º52'E. The total area is 4987.38 sq. km. It covers three wildlife conservation units, viz. Bori Wildlife Sanctuary (485.72 sq. km), Satpura National Park (524.37 sq. km), and Pachmarhi Wildlife Sanctuary (417.78 sq. km). Present paper deals with the description of a new species of genus *Cambalida* from Central India.

Material and Methods

The present study is based on five female specimens of *Cambalida* collected in May 2014 from Pachmarhi Wild Life Sanctuary by active search method. Family level identification was done with the help of the key of Jocqué & Dippenaar-Schoeman (2006). Further generic level and sub family level identification was done with the help of the book of Deeleman-Reinhold (2001) on spiders of Southeast Asia. The basic identification of specimen was done by using Olympus SZ61 stereomicroscope mounted with slides SLI 1500 camera. The spider specimens were preserved in 70% ethanol and is currently deposited in Spider Research Laboratory of J.D.P.S.M, Daryapur. Epigyne is dissected and cleared in 10% KOH. Leg measurements are given in the following sequence: total length (femur, patella, tibia, metatarsus, and tarsus).

All measurements are in millimetres. Abbreviations and their explanations are as follows: AER = anterior eye row; ALE = anterior lateral eyes; AME = anterior median eyes; d = dorsal; dt = dorsal terminal; MOQ = median ocular quadrangle; MOQAW = median ocular quadrangle anterior width; MOQL = median ocular quadrangle length; MOQPW = median ocular quadrangle posterior width; PER = posterior eye row; pl = pro lateral; PLE = posterior lateral eyes; plt = prolateral terminal; plv = prolateral ventral; PME = posterior lateral eyes; rl = retro lateral; rlv = retrolateral ventral; SRL, JDPSM = Spider Research Laboratory of J.D.P.S.M, Daryapur (MH), India; ST = spermatheca; vt = ventral terminal.

Results

Taxonomy

Genus *Cambalida* Simon, 1909

Diagnosis of the genus: "*Cambalida* is most closely related to *Castianeira* but can be recognised by the relatively broader carapace (width approximately 0.75 carapace length, usually less than 0.70 in *Castianeira*), ALE that are usually considerably larger than the

AME, and the posterior eyes that are larger than those of the anterior eye row. Males can further be distinguished from all other castianeirines by the presence of two or three rows of very distinct, longer thickened setae at the distal end of the dorsal surface of the palpal cymbium. These setae usually number between six and 10 and are sometimes accompanied by slightly shorter, thickened setae to the sides of these rows. Other genera that possess thickened setae do not show such an arrangement and usually only have two or three thickened setae at the apex of the cymbium" (Hadded, 2012).

***Cambalida dhupgadensis* sp. n.** (Figs. 1-9)

Material examined: Female holotype from Pachmarhi Wildlife Sanctuary, Madhya Pradesh, (22º31'30.0"N, 78º25'40.9"E), India; May 2014, collected by Subhash Kamble (SRL, JDPSM). Paratypes: 4 Females; same data as holotype.
Type locality: Pachmarhi Wildlife Sanctuary, Dist. Hoshangabad, Madhya Pradesh, India.
Etymology: The specific epithet refers to the type locality, Dhupgad a place in Pachmarhi wildlife sanctuary.
Diagnosis: Typical roughly bean shaped spermathecae, "C" shaped copulatory duct with circular copulatory opening (Figs. 6-7), which are dissimilar characters to the rest of the *Cambalida* species. It seems somewhat similar to *C. deorsa* but length and curvature of copulatory ducts as well as shape of ST makes difference.
Distribution: Only known from the type locality.

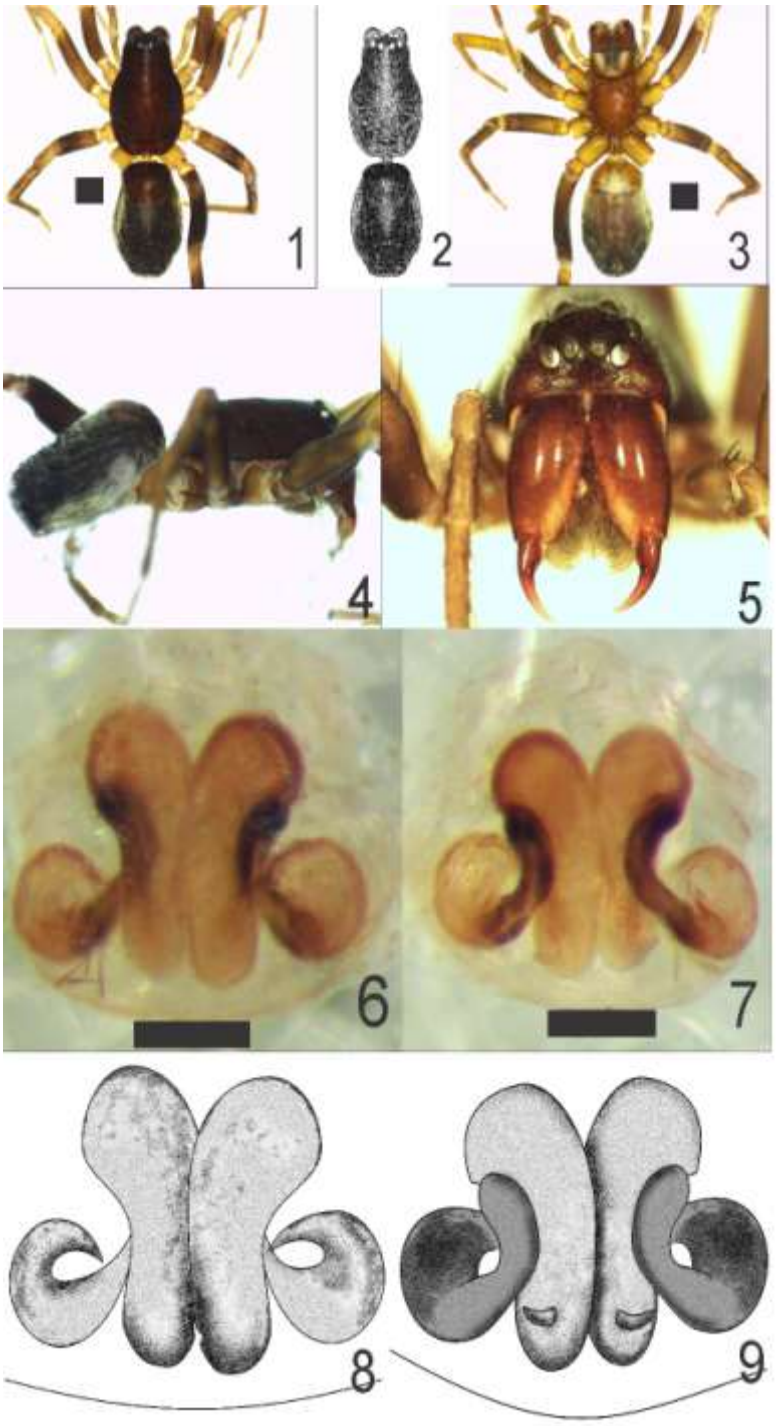
Description
Measurements: Total length 5.17. Cephalothorax 2.51 long, 1.81 wide. Abdomen 2.37 long, 1.74 wide. Clypeus height 1.66. Chelicera 0.75. Fangs length 0.55. Eyes diameters: AME 0.098, ALE 0.110, PME 0.130, PLE 0.140. MOQAW 0.192, MOQPW 0.237, MOQL 0.131. AME-AME 0.080, AME-ALE 0.033, ALE-ALE 0.317, PLE-PLE 0.522, PME-PME 0.143, PME-PLE 0.073. Sternum length 1.089, width 1.063. Measurements of Legs: Leg I 5.30 (1.51, 0.56, 1.38, 1.08, 0.77), II 4.66 (1.40, 0.54, 1.22, 0.86, 0.64), III 4.93 (1.26, 0.56, 1.16, 1.11, 0.84), IV 7.99 (2.01, 0.71, 2.06, 2.16, 1.05). Length of palp 1.82.

Carapace finely granulated, posterior margin convex, its length : width < 2 times, dark brown with darker margins, presence of scattered plumose and straight setae, cervical grooves distinct, anterior narrow, posterior broad, straight and elevated posterior to PER; cephalic region narrowed anteriorly, cephalic region broadest at coxae II and III, ocular area blackish with presence of curved setae around it (Fig.1).

Eyes arranged in two rows, AER procurved and PER strongly procurved, PER larger than that of AER, each eye black bordered, PER>AER, ALE>AME, AME close to ALE, PME slightly smaller than PLE, PME closer to PLE than to each other, MOQ much wider anteriorly than posteriorly (Figs. 1-2, 5). Clypeus lower than eye region, presence of few curved setae, no distinct chilum (Fig. 5).

Chelicerae stout, dark brown with setae at outside and curved dense scopulae inner margins/surface; fangs brown, pointed, strongly curved serrated margins, thick at base, pointed at tip; pro-margin with three teeth, among which middle tooth is large and strong as compared with other two teeth; retro-margin with two large and strong teeth surrounded by fine scopulae (Fig. 5).

Endites thick, larger than wide, anteriorly thickened, presence of small setae anteriorly and inner margins with dense curved scopulae, distal end with serrulae in the form of a line (Fig. 3).



Figs.1-9. *Cambalida dhupgadensis* sp. n. 1-5. Habitus. 1-2. dorsal view. 3. ventral view. 4. lateral view. 5. frontal view. 6-8. Epigyne. 6, 8. dorsal view. 7, 9. ventral view. Scale bars: (1, 3) 0.5 mm, (6-7) 0.1 mm.

Labium hemispherical, re-bordered, presence of few setae over it and presence of dense scopula at its anterior tip and inner margin, twice as broad as long (Fig. 3).

Female palp had all segments slender, longer tarsus and metatarsus, presence of numerous setae over all segments except trochanter and femur where less or few setae present; yellowish brown; 1 tarsal claw. Spination: Patella d2 plt1, Tibia pl1 dt1 d1, Metatarsus pl2 d2, Tarsus d1 pl2 rl1 v2.

Sternum very slightly longer than broad, shield shaped, finely granulated surface, presence of few short setae over it (Fig. 3).

Leg formula 4132, with short spines over segments of legs, clothed with straight black setae serrated as well as plumose setae. Trochanter notched, femora dark brown coloured with ventral seta proximally, rest of the segments are light coloured viz., yellowish coloured, patella each with long fine dorsal seta, tibia I with long fine seta at ¾ of its length, absent from II and IV, metatarsi III with dense scopulae at distal end. Trichobothria present on tibia, tarsus and metatarsus dorsally as well as laterally (Figs. 1, 3). Spination: Femora I pl 1 d 3, II pl 1 d 3, III pl2 d3 rl 2, IV pl 2 d3 rl1. Tibiae I plv 2 rlv 2, II rlv2, III pl 2 rl 2 d 1 plv 2 rlv 1 vt 2, IV pl 2 rl 2 d 2 plv 2 rlv 1 vt2. Metatarsi I plv 2 rlv2, II plv 2 rlv 2, III pl1 rl3 plv 2 rlv 2 vt 3, IV pl3 rl 3 plv2 rlv 2 vt 3.

Abdomen oval, dark grey-black in colour, dorsal scutum is present which is ¼th the length of the abdomen, surface of scutum is granular, clothed with white as well as blackish plumose hair, few large straight setae present at distal tip of abdomen near to pedicel, rest of the abdomen in the form of folding muscles, at posterior tip of the abdomen near to spinnerets, a creamy white coloured spot or patch in the form of dense plumose setae present above spinnerets. Venter cream coloured, with scutum up to the epigastric furrow, below which epigyne and book lungs are situated, rest of the abdomen is clothed with grey-black plumose hair of same size (Figs. 1, 3, 4).

Spinnerets at the tip of abdomen towards ventral side, small, aggregated together, surrounded by rounded fold, clothed with hair, segmented light coloured.

Epigyne brown, less sclerotised plate, bean shaped spermathecae and circular openings at its sides (Figs. 6, 8).

Vulvae: copulatory duct C shaped, short dark brown in colour arising posterio-laterally from ST II, curved medially, turns laterally and opens outside by copulatory opening dorsally, ST II large, bean shaped, distal end broad, curved, proximal end straight, narrow, ST II joins broadly and medially to the comma shaped short, laterally directed ST I (Figs. 7, 9).

Discussion

"*Cambalida* appear to be exclusively ground-dwelling leaf litter spiders occurring mainly in savanna and forest habitats" (Haddad, 2012). In contrast, they can be collected from agro-ecosystems in South Africa (Haddad & Dippenaar-Schoeman, 2006). Genus *Cambalida* was previously known from Afrotropical Africa (World Spider Catalog, 2015) but recently Murthappa *et al.* (2016) reported its presence in Asia. Present study added a new species of it reported from Pachmarhi Wildlife Sanctuary MP, India. As it is forest habitat species, it can also be found in Eastern and Western Ghats of India as these regions are known as biodiversity hotspots and are gifted with rich forest and fauna and flora. India is blessed with rich biodiversity of most of the floral and faunal species but their identification and conservation practices are uncommon. If these practices are regularly performed, they can be helpful for finding new species, and endangered species conservation and their relationship with the ecosystem will be helpful for the biodiversity. This work may be helpful in future to Satpura Landscape forest ecosystem management program.

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(Wildlife) Bhopal, M.P. for providing the necessary permission for conducting this investigation. We sincerely convey our gratitude to the Wildlife Institute of Dehradun for their support and encouragement. We also sincerely convey our gratitude to the field director, Satpura Tiger Reserve, A. K. Mishra, and his staff for support during fieldwork. We are also thankful to Dr. Charles Richard Haddad, the Late Dr. Ganesh N. Vankhede, and Dr. Shazia Quasin for their valuable suggestions during preparation of the manuscript. Our sincere thanks are also due to Principal J.D.P.S.M, Daryapur for giving necessary facilities and support for research work. We are also thankful to Dr. Mahesh Chikhale, Dr. G. B. Santape, Dr. Sawan Deshmukh and Shripad Manthen for their field assistance that helped in the field work.

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urn:lsid:zoobank.org:act:7DBD70F3-5E58-4005-B16F-FF958894A299

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A new crab spider record from Turkey (Araneae: Thomisidae)

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Abstract

This short paper reports a thomisid species which is new for the Turkish araneo-fauna. The characteristic features and photographs of *Xysticus tenebrosus* Šilhavý, 1944 are presented. The total number of thomisid species recorded from Turkey is now 89.

Keywords: Araneae, Thomisidae, *Xysticus tenebrosus*, New record, Turkey.

Introduction

A total of 2154 species in 175 genera have been identified in the family Thomisidae all over the world (World Spider Catalog, 2016). A total of 88 thomisid species in 14 genera are known in Turkey (Bayram *et al.*, 2016). Genus *Xysticus* C.L. Koch, 1835 is represented by 370 species in the world (World Spider Catalog, 2016). Forty seven species have hitherto been known in Turkey from *Xysticus* (Bayram *et al.*, 2016). This paper deals with the characteristic features and distribution of *Xysticus tenebrosus* Šilhavý, 1944 adding a new species to the araneo-fauna of Turkey.

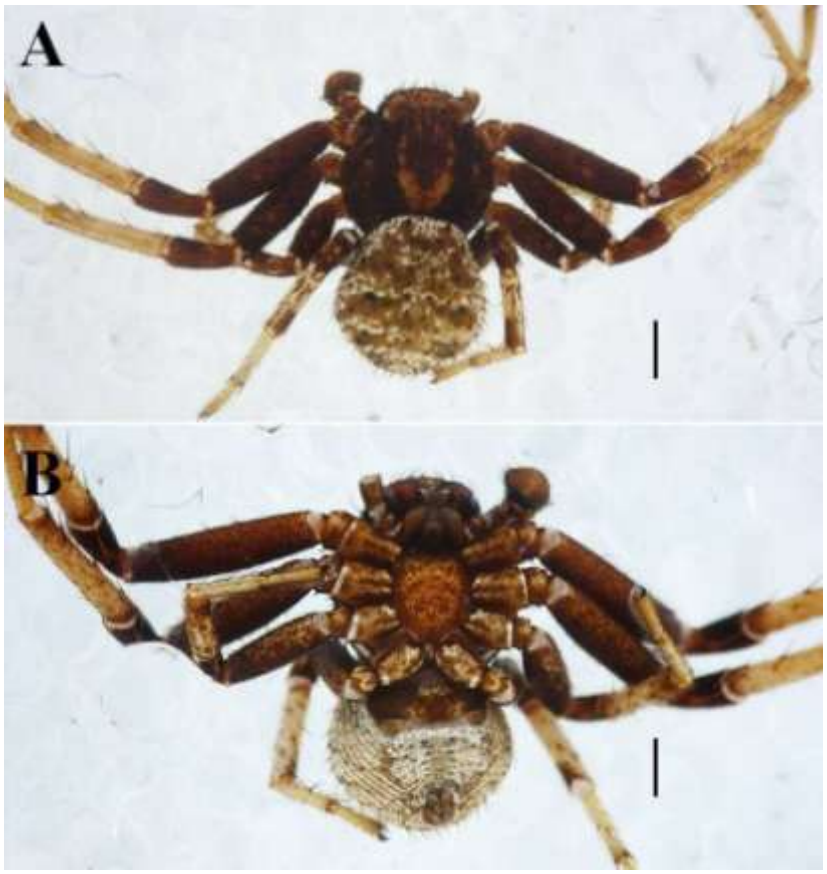
Material and Methods

Specimens were found under stones and collected during the day by hand aspirator. All the specimens are preserved in 70% ethanol and are deposited in the collection of the Arachnological Museum of Kırıkkale University (KUAM). Pictures were taken using a Leica S8APO microscope by means of a Leica DC 160 camera. Specimens were examined in dishes of different sizes with paraffin on the bottom. Different size holes were made in the paraffin to keep specimens in the right position.

Identification depended on Šilhavý (1944), Wunderlich (1995), and Deltshev *et al.* (2004). Images were montaged using "Combine-ZM" image stacking software and "Photoshop CS5" image editing software. Measurements are given in millimetres. Measurements of leg segments were taken from the dorsal side.

Results

Xysticus tenebrosus Šilhavý, 1944
Material examined: 2♂, Sinop Province, Drannaz mountain (41°37'52"N, 34°53'49"E), 1350 m, 07.06.2013, from stony ground.



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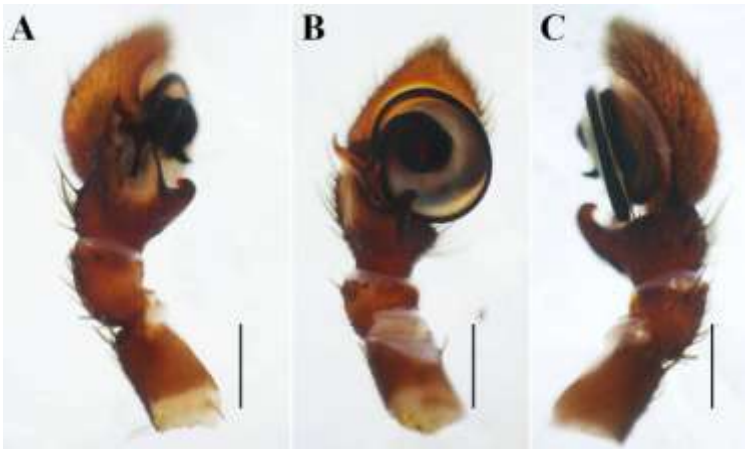

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Figs. 1-3. *Xysticus tenebrosus* Šilhavý, 1944, male. 1. Habitus. A. dorsal view. B. ventral view. 2. Ocular area, frontal view. 3. Palp. A. prolateral view. B. ventral view. C. retrolateral view. Scale bars: (1) 1.0 mm, (2-3) 0.5 mm.

Male description. Total length 6.5. Prosoma 3.3 long, 3.1 wide. Abdomen 3.2 long, 3.0 wide. Prosoma is dark brown with dorso-longitudinal white colour. Chelicerae are yellowish-brown and black haired dorsally. Sternum is yellowish-brown. Abdomen has a white colour, light brown patterns on some places. Coxa, femur and patella of legs are dark brown, remaining segments yellow. Palp as in Fig. (3). Leg formula II-I-III-IV. Leg measurements as in Table (1).
Distribution: East Mediterranean (World Spider Catalog, 2016).

Table 1. Measurements of the legs of male *Xysticus tenebrosus* Šilhavý, 1944.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	3.1	1.2	2.3	2.0	1.2	9.8
II	3.2	1.3	2.4	2.1	1.2	10.2
III	2.3	1.0	1.6	1.0	0.9	6.8
IV	2.2	0.8	1.5	1.2	0.8	6.5

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A note on *Eresus albopictus* Simon, 1873 (Araneae: Eresidae)

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Abstract

The history of *Eresus albopictus* Simon, 1873 is discussed in this work in addition to the description of old material from Morocco with measurements and photographs of the female external genitalia.

Keywords: Araneae, Eresidae, *Eresus albopictus*, Morocco.

Introduction

Among the 16 species (+ 5 subspecies) of genus *Eresus* Walckenaer, 1805, *Eresus albopictus* Simon, 1873 is one of the poorly studied species (World Spider Catalog, 2016).

In his work on the European species of Family Eresidae, Eugène Simon described a female of the new species *Eresus albopictus* collected from the surroundings of Palermo by Prof. Waga (Simon, 1873). Its measurements were: Cephalothorax L 8.2 W 5, Abdomen L 12 W 9, Legs I 17 II 14.5 III 12.5 IV 17. In the same paper, Simon described another new species *Eresus lucasi*. The data of his material were: 2♂ and 1♀ found near Oran (1♂ from Lalla-Maghrnia) by M. H. Lucas in 1850. The measurements of the male and female were: ♂ Cephalothorax L 6.8 W 5, Legs I 13 II 11 III 9.5 IV 13; ♀ Cephalothorax L 9.5 W 7, Legs I 16.5 II 13.5 III 11.6 IV 17. Later, *Eresus lucasi* was mentioned by Simon (1892).

After many years, Simon redescribed *Eresus albopictus* and synonymised *E. lucasi* with *E. albopictus* (Simon, 1910). The data of the new material were: ♂ Long.: 7-10 mill. ♀ Long.: 18-22 mill. Algérie: Orléansville ! Daya (*L. Bedel*), Oran, Marnia (*Lucas*). Maroc: Mogador (*de la Escalera*), Melilla (*Arias*).

After the description Simon (1910) said: "J'ai décrit l'*Eresus albopictus* de Palerme, d'après une femelle qui m'avait été donnée par le Prof. Waga, mais j'ai aujourd'hui des doutes sur l'exactitude de cette provenance; le prof. Waga recevait des insectes de localités très diverses et lui-même avait voyagé en Algérie." He was not sure of the accuracy of the locality of the specimen of Palermo!

Roewer (1954: 1293) followed Simon (1873, 1892, 1910) in his "*Katalog der Araneae*" reporting only Algeria and Morocco for the distribution of *Eresus albopictus*.

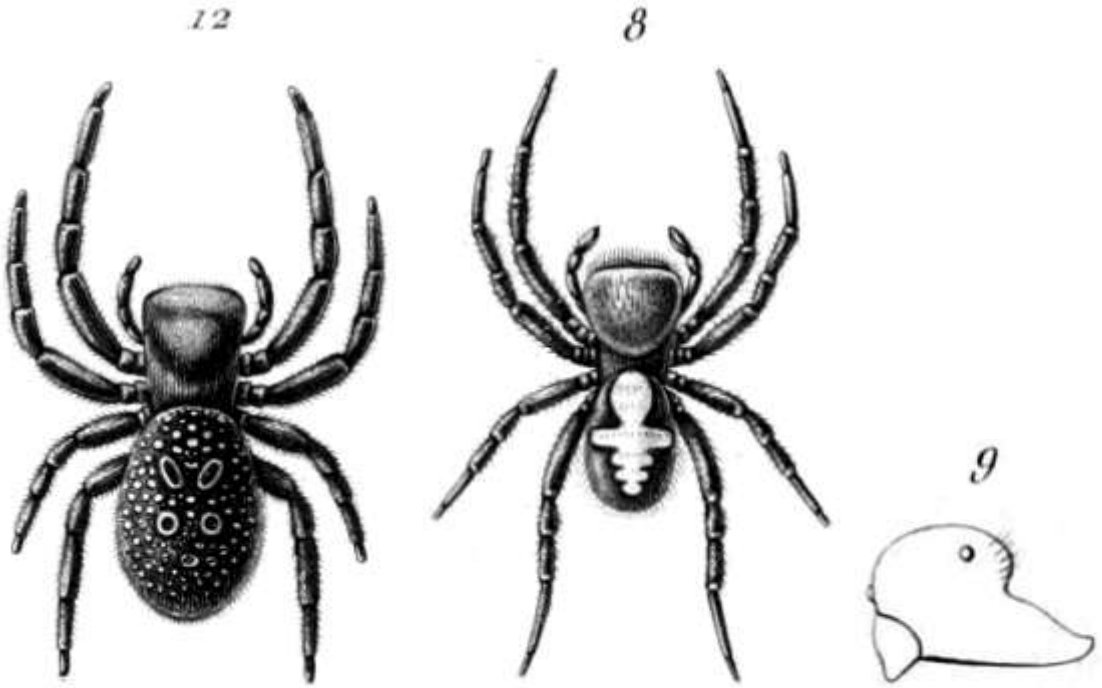

Fig. 1. *Eresus albopictus* Simon, 1873 - Figures published with the first description (Simon, 1873: pl. 10) f. 12 [♀ *Eresus albopictus* Habitus, dorsal view]. f. 8-9 [♂ *Eresus lucasi* 8. Habitus, dorsal view, 9. Prosoma, lateral view].

Lehtinen (1967: 231) transferred *Eresus albopictus* to genus *Dorceus* "*Eresus albopictus* Sim. 1873 (♂♀ Paris) = *D. albopictus* n. comb." without explanation. El-Hennawy (2002: 70-71) rejected the transfer depending on the material studied in this work and said: "The genitalia of this species were examined and compared with the three female specimens of *Dorceus latifrons* to find that they are completely different. This species does not belong to genus *Dorceus*. The ratio between length and width of cephalic part and width of thoracic part (Fig. 30) elucidates this. It is obvious in this figure that *E. albopictus* is different from *Dorceus* females and similar to *Eresus* specimens (Two females of *E. petagnae* (Audouin, 1825) from Alexandria, Egypt, B.507 t.9 OMNH, were compared with.). It was transferred to genus *Dorceus* by Lehtinen (1967). It has to be restored to genus *Eresus* again."

Abbreviations used: ALE = anterior lateral eye; AME = anterior median eye; L = length; PLE = posterior lateral eye; PME = posterior median eye; TL = total length; W = width. Material from the following collections were examined: MNHN = Muséum National d`Histoire Naturelle, Paris, France; OMNH = Oxford University Museum of Natural History. All measurements are in millimetres.

Family **Eresidae** C.L. Koch, 1845
Genus **Eresus** Walckenaer, 1805
Eresus albopictus Simon, 1873 Figs. 1-5

Eresus albopictus Simon, 1873: 352-353, pl. 10, f. 12 (D♀).
Eresus lucasi Simon, 1873: 353-355, pl. 10, f. 8-9 (D♂♀).
Eresus lucasi Simon, 1892: 251 (N).
Eresus albopictus Simon, 1910: 295-296 (D♂).
Dorceus albopictus Lehtinen, 1967: 231 (T♂♀ from *Eresus*).
Eresus albopictus El-Hennawy, 2002: 70 (rejected T).

Material examined: MNHN: 2 tubes, from Morocco: 2♀ from: Agadir 30º27'N 09º36'W on Atlantic ocean coast (L. Berland, IV-1939) (AR5387); 2♀ (dry) from: Goulimine 29º00'N 10º05'W about 35 km from Atlantic ocean coast (L. Berland, V-1939) (AR5388). [Note. Type material of *Eresus albopictus* and *Eresus lucasi* not seen.]

Description of *Eresus albopictus* ♀: Maroc (Morocco) - Agadir, Berland IV-1939 MNHN AR 5387.
Colouration: see Simon (1873, 1910) and Nentwig *et al.* (2016).
Integument: cephalothorax reddish brown, legs and palps brown; all covered by brown hairs.
TL 19.86 Cephalothorax L 10.88 Cephalic part: L 7.39 W 7.56; highly raised than the thoracic part; posteriorly narrowed; ends in a straight line then abruptly inclines to the thoracic part.
Eyes: PME largest, about twice the AME; AME smallest, others subequal. Median eyes quadrangle trapezoidal with anterior edge much narrower than the posterior one. ALE directed laterally and downwards.
Clypeus very narrow, 0.42 from AME.
Eyes measurements (diameters "Diam." and interdistances "W") (mm):
AME 0.24, ALE 0.26, PME 0.40, PLE 0.29, AM-AM 0.29, AM-AL 2.33, AL-AL 5.35, AM-PM 0.24, PM-PM 0.71, PL-PL 5.10.
Diam. PME : Diam. AME 1.67
W PME : W AME 2.45
W PLE (% of W ALE = 100%) 95.33 %
Thoracic part: L 3.49 W 6.80; almost flat, faintly inclined behind the cephalic part until the end of the thoracic part. Fovea small, deep, just behind the incline of the cephalic part.
L cephalothorax : W cephalothorax anteriorly 1.44
L cephalothorax : W cephalothorax posteriorly 1.60
Chelicerae: covered by dense brown hairs anteriorly; with big tooth on the inner edge; with strong boss.
Sternum: L 5.78; Labium L 1.95; Maxilla L 2.97.
Pedipalps: with a few ventral spines on tarsi.
Legs: Metatarsus IV with calamistrum on retrolateral side, of short thick setae, extending to 2/3 of the segment.
Tarsi: tip thickened, laterally pressed; with weak scopula; with three claws, two uniserrated and one smooth; claw tuft concealing claws.
Metatarsi and tarsi I-IV with a few ventral spines. Tibia IV with one distal-prolateral spine.

Table 1: Legs measurements (mm).

Legs	Femur	Patella	Tibia	Metatarsus	Tarsus	Total length
I	5.27	3.14	3.14	3.48	2.21	17.24
II	5.18	3.06	2.97	2.97	1.78	15.96
III	5.10	2.97	2.55	2.55	1.27	14.44
IV	6.03	3.74	3.99	3.48	1.44	18.68

Leg formula IV-I-II-III
Relative length of legs 92 : 85 : 77 : 100
L leg I : L cephalothorax 1.58

Abdomen: L 12.24; entirely covered by brown hairs dorsally and ventrally. No abdominal pattern. Epigynum and vulvae (Figs. 2-4) as described by Řezáč *et al.* (2008: 267).
Spinnerets: anterior pair big and thick and others comparing very small. Cribellum (Fig. 5).

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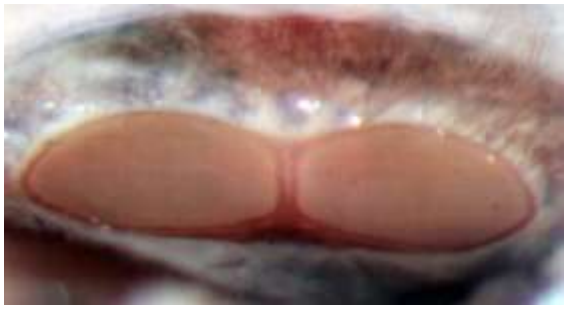
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Figs. 2-5. *Eresus albopictus* Simon, 1873. 2-3. Epigynum, ventral view (3 after maceration). 4. Vulvae, dorsal view. 5. Cribellum.

Other specimens:
1♀ (AR5387): TL 26.62 - Because of dryness, abdomen not smooth, with white small spots everywhere on brown background; cephalic part: L 7.74 W 8.08.
2♀ **(**AR 5388) Maroc sud: Goulimine L. Berland V-1939. Two dry females: TL 11.56, another (with epigynum not obvious) TL 15.64.

Distribution: Morocco, Algeria (World Spider Catalog, 2016). **Algeria**: El-Asnam (Orléansville) 36º04'N 01º19'E, about 42 km from seacoast, Daya? (*L. Bedel*); Wahran (Oran) 35º42'N 00º38'W, on seacoast; Maghnia (Marnia) 34º51'N 01º43'W, about 34 km from seacoast; near Oran [2♂, 1♀], 1♂ from small locality called Lalla-Maghrnia (*M. H. Lucas 1850*). **Morocco**: Essaouira (Mogador) 31º40'N 09º45'W, on Atlantic ocean coast (*de la Escalera*), Melilla 35º13'N 02º57'W, on seacoast (*Arias*), 2♀ from: Agadir 30º27'N 09º36'W on Atlantic ocean coast (*L. Berland, IV-1939*); 2♀ from: Goulimine 29º00'N 10º05'W about 35 km from Atlantic ocean coast (*L. Berland, V-1939*). **Italy**: Sicily: near Palermo 38º08'N 13º25'E, on seacoast (*M. le professeur Waga*) [That record was doubted by Simon (1910) although he accepted it before (1873), but it may be true because Sicily is very near to the African Mediterranean coast. Therefore, it may be possible to find this species there.]

Although there is no new material of *Eresus albopictus* from Italy, and the World Spider Catalog supports Simon's doubt of this locality, there are two websites on Italian and European spiders follow Simon (1873) (Pantini & Isaia, 2016; Nentwig *et al.*, 2016: http://www.araneae.unibe.ch/data/4083/Eresus_albopictus).

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